

Date: Tuesday, 03/02/2009 8:30:20 AM
 User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : TAIL LIGHT FAIRING *Split*
 Job Number : 45434
 Estimate Number : 12364
 P.O. Number :
 This Issue : 03/02/2009 S.O. No. :
 Prsht Rev. : NC
 First Issue : 03/02/2009 Type : LARGE FAB ASSY
 Previous Run : 44095
 Part Number : D3484041
 Drawing Number : D3484 REV E
 Project Number : N/A
 Drawing Revision : E
 Material :
 Due Date : 28/02/2009 Qty: ¹⁰ 15 Um: Each
 Written By :
 Checked & Approved By :
 Comment : Est Rev:A New Issue 06-04-11 JLM
 Est Rev:B 08-01-24 change rivet to CR1122-3-025 DD
 verified by:EC

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 PG PURCHASING



Comment: PURCHASING

ISSUE P.O. 8120

possible supplier: GFI

D3484-041 INCLUDES D3484-1, D3484-3, D3484-5

FORMED AND WELDED *PER QSI 005*

CHEMICAL CONVERSION, NUTPLATES AND

POWDER COATING TO BE DONE AT DART

*0209/02/10 3**(15)*

2.0 D3484041P Tail Light Fairing Assembly, LH



Comment: Qty.: 1.0000 Each(s)/Unit Total: 15.0000 Each(s)

Tail Light Fairing Assembly, LH

3.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

RECEIVE AND INSPECT FOR TRANIST DAMAGE

ENSURE MAT'L CERTIFICATION ATTACHED

*12/4/3/20**(16)*

4.0 QC9 VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

P10 09-03-23 (16)

Dart Aerospace Ltd

W/O: 45434		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
09-03-23	3	ONE sent to David (Eagle) for pull test	L	09-03-23	1	L	

Part No: D3484-041 PAR #: N/A Fault Category: Supplier NCR: Yes No DQA: D Date: 05/04/03
 Resolution: re-work Disposition: re-work QA: N/C Closed: D Date: 05/04/03

NCR: 45434		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9/3/23	4.0	During welding inspection Qty 40 parts were found with flaws in the welding	AS1042	Do welding touch up as per AS2 004	BE 09/03/23	S 9/3/31	AS1042	AS1042
			AS1042	Inform GPI at Poplem.		See a Hader E-mail Last page	AS1042	AS1042
09-03-31	5.0	upon inspection it was noticed that the material used was 6061-T0. trans sent to eagle. R.C:	AS1042	Material is acceptable per attached e-mail. Dwg will be updated. Determine root cause from GPI as to why 6061-T0 was used, i sub mit d written response			AS1042	AS1042
09-03-31	10.0	upon Ass'y 1 rivet stem pulled through: broke, over-sizing the hole on 1 part. R.C: Process	AS1042	Remove plodine: R 11 the hole with weld per AS1042. Rod m 108436 grind flush: transfer ch 11 the hole: re-counter sink	PC 09-03-31 FF 09/03/31	S 02/03/31	AS1042	AS1042

NOTE: Date & initial all entries

Date: Tuesday, 03/02/2009 8:30:20 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TAIL LIGHT FAIRING

Job Number: 45434

Part Number: D3484041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

502/03/31

P10
previous page

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

FL 09/03/31

(15)

7.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

a.m 09.03.31 (5)

8.0

CR1122 3 025

RIVET



Comment: Qty.: 4.0000 Each(s)/Unit Total: 60.0000 Each(s)

Rivet

Batch: M111182

83 09/03/31 (15)

9.0

MS2106904

ANCHOR NUT



Comment: Qty.: 2.0000 Each(s)/Unit Total: 30.0000 Each(s)

ANCHOR NUT

Batch: B703 693 (20)

M110916 (14)

SD 09/03/31

15

10.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install Nut Plates as per Dwg D3484

EB 09/03/31

SD 09/03/31

FF (PT) previous page (10) (9)

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8 09/03/31

(-041)

(+10)

12.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

8:15

OVEN TEMPERATURE:

326°

FINISH TIME:

8:45

OK 09-04-01

Date: Tuesday, 03/02/2009 8:30:20 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TAIL LIGHT FAIRING

Job Number: 45434

Part Number: D3484041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-04-01

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

Identify on inside surface as indicated

TCCA-PDA,DART AEROSPACE LTD

P/N:D412-750-141 B/N:BXXXXX

FOR PRODUCT ELIGIBILITY SEE PDA06-13

9/4/1

50

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 02/04/01 x10

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

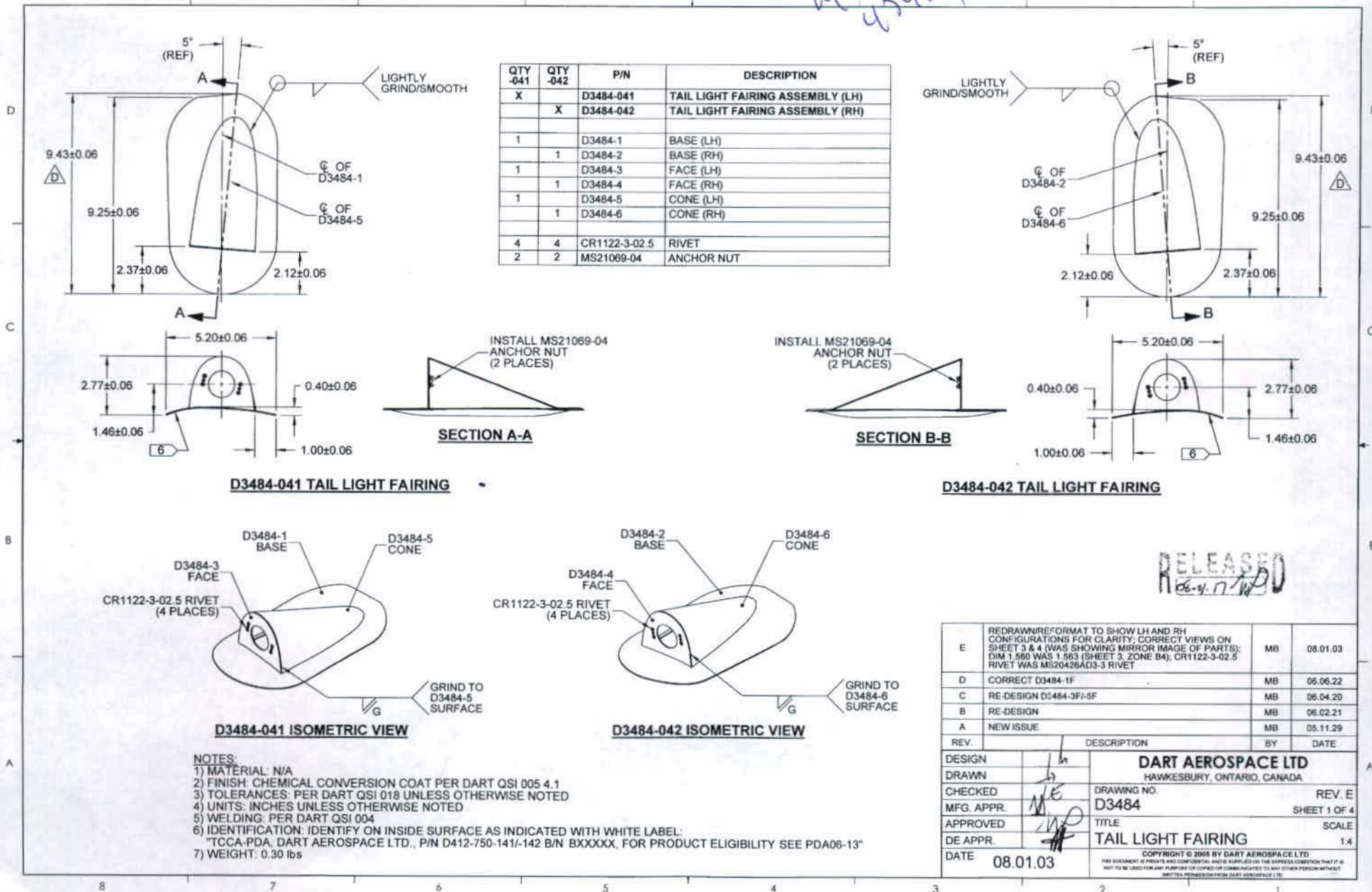
09/04/01

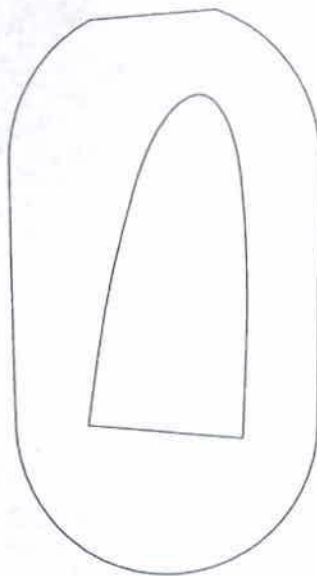
Job Completion



u 9.04.01

1004534

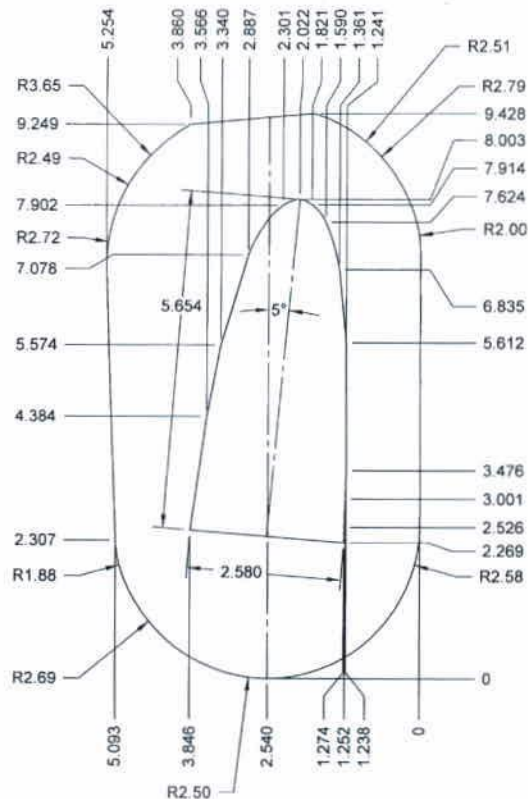




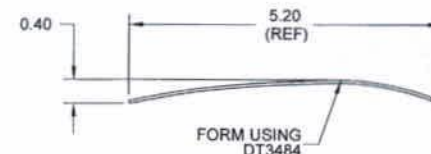
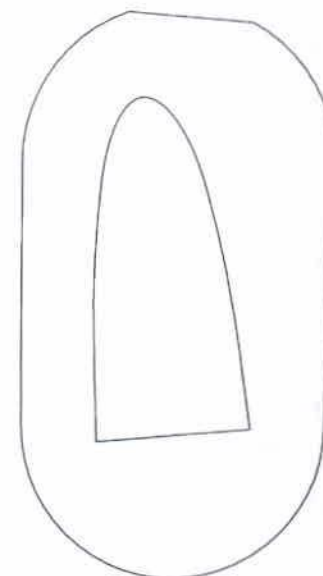
D3484-1 BASE
(MAKE FROM D3484-1F)

NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T62) ALUMINUM SHEET (0.050 THICK)
PER AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027
(REF. DART SPEC. M6061T6S.050)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.16 lbs



D3484-1F BASE FLAT PATTERN

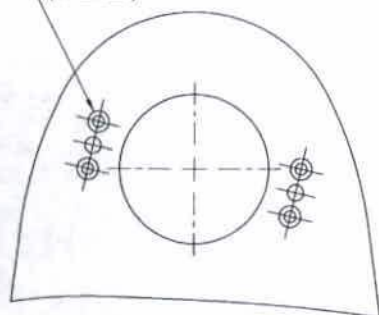


D3484-2 BASE
(MAKE FROM D3484-1F)

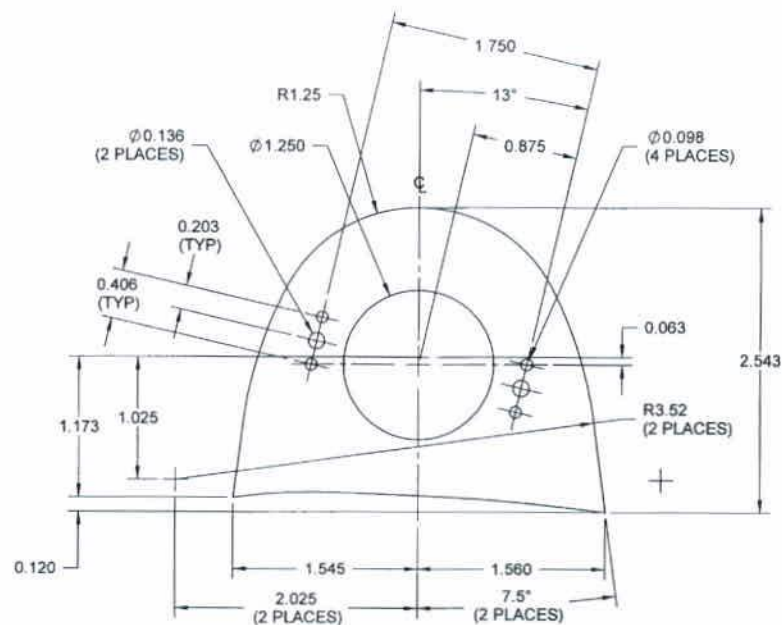
RELEASED
08-01-17

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3484	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		TAIL LIGHT FAIRING	1:2
DATE	08.01.03	COPYRIGHT © 2005 BY DART AEROSPACE LTD	
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C'SINK
Ø 0.181 X 100°
(4 PLACES)



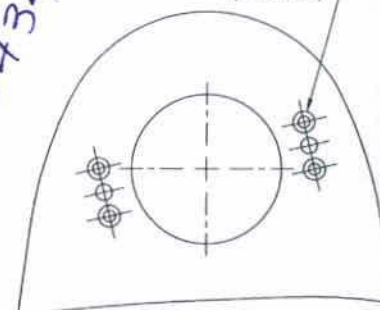
D3484-3 FACE
(MAKE FROM D3484-3F)



D3484-3F FLAT PATTERN TAIL LIGHT FAIRING

45434

C'SINK
Ø 0.181 X 100°
(4 PLACES)



D3484-4 FACE
(MAKE FROM D3484-3F)

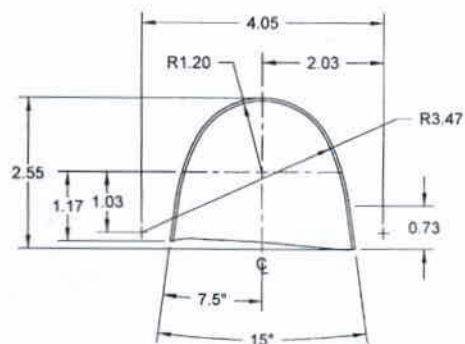
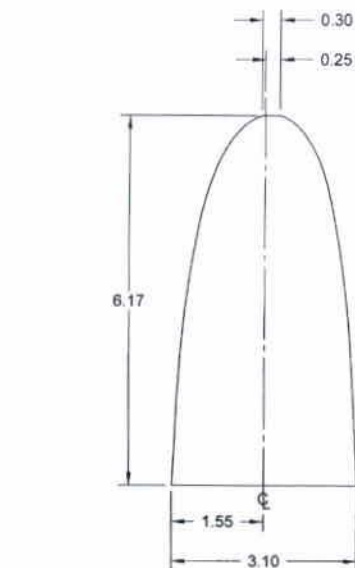
NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T62) ALUMINUM SHEET (0.050 THICK)
PER AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027
(REF. DART SPEC. M6061T6S.050)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.02 lbs

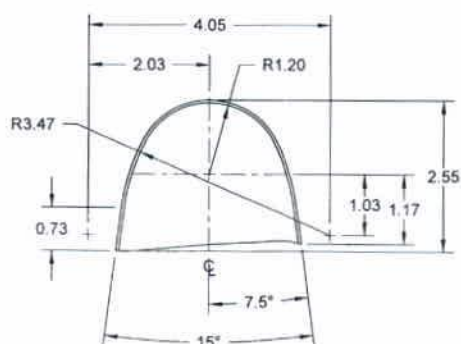
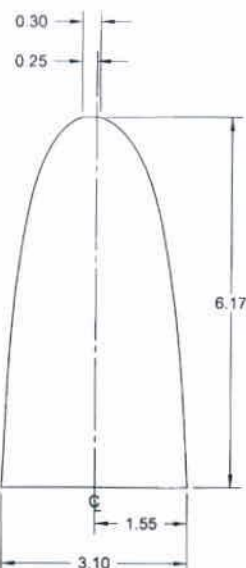
RELEASED
08-01-17

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	LE	DRAWING NO. D3484	REV. E
MFG. APPR.		TITLE	SHEET 3 OF 4
APPROVED		TAIL LIGHT FAIRING	SCALE 1:1
DE APPR.			
DATE	08.01.03		

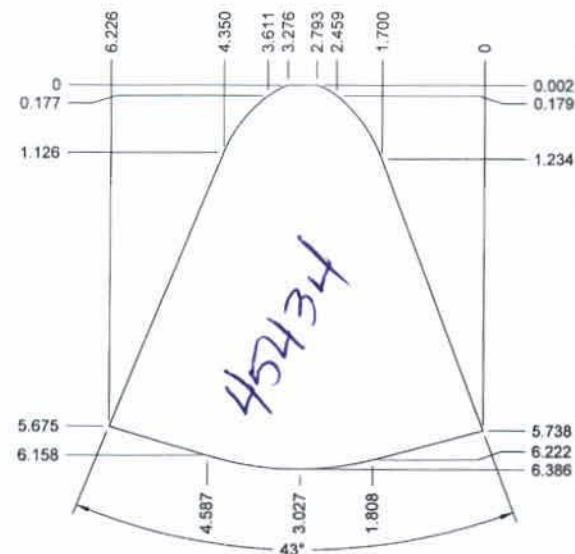
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WRITTEN PERMISSION FROM DART AEROSPACE LTD



D3484-5 CONE
(MAKE FROM D3484-5F)



D3484-6 CONE
(MAKE FROM D3484-5F)



D3484-5F CONE FLAT PATTERN

NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T62) ALUMINUM SHEET (0.050 THICK)
PER AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027
(REF. DART SPEC. M6061T6S.050)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.11 lbs

11 08.01.03

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3484	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		TAIL LIGHT FAIRING	1:2
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180 AVENUE LABROSSE
POINTE-CLAIRE, QUÉ., CANADA H9R 1A1
TÉL.: (514) 630-4877 - FAX: (514) 630-4849



BON DE LIVRAISON - SHIPPING MEMO

DATE DE LIVRAISON SHIPPING DATE	N° BON DE LIVRAISON SHIPPING MEMO NO.
2009/03/19	0415764

GFI est une division de Thomas & Betts Fabrication Inc. / GFI is a division of Thomas & Betts Manufacturing Inc.

ENVOI À / SOLD TO

EXPÉDIÉ À / SHIPPED TO

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON, K6A 1K7

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON, K6A 1K7

CODE DE CLIENT CUSTOMER CODE		N° DE CONTRAT JOB NO.	N° COMMANDE PO NO.	VIA SHIP VIA
DART GFI-0299		J0197208	PO00008120	
QUANTITÉ QUANTITY	VOTRE N° DE PIÈCE YOUR PART NO.		DESCRIPTION	
16	D3484041P		TAIL LIGHT FAIRING CERTIFICATE OF CONFORMANCE REQ	

TOUTES LES RÉCLAMATIONS DOIVENT ÊTRE FAITES EN DEDANS DE 5 JOURS DE LA RÉCEPTION
ALL CLAIMS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF GOODS

RECU PAR / RECEIVED BY

CERTIFICATE OF COMPLIANCE CERTIFICAT DE CONFORMITE



Membre de / A Member of **Thomas & Betts**

180 LABROSSE AVENUE
POINTE CLAIRE, QC
H9R 1A1

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7


CERTIFICATE NO.	1	OUR JOB NO	J0197208	SHIPPING MEMO	0415764
ITEM	QUANTITY	PURCHASE ORDER	PART NUMBER	REV	NAME
---	16 PCS	PO00008120	D3484041P	E	TAIL LIGHT FAIRING
MATERIAL			SUPPLIED BY		MAT. REL. NO.
AL 6061-T0 (QQ-A-250/11)			SAMUEL / ALCOA INC		564405

	PROCESS	PROCESSOR	RELEASE NOTE #
1	FIRST ARTICLE INSPECTION REPORT ON FILE	GFI	CONFORMS
2			
3			
4			
5			
6			
7			
8			
9			

WE HEREBY CERTIFY ALL THE PARTS COVERED BY THIS CERTIFICATE HAVE BEEN MANUFACTURED FROM MATERIAL SUPPLIED ON RELEASE NOTE SHOWN ABOVE AND THAT ALL PARTS HAVE BEEN INDIVIDUALLY INSPECTED AND CONFORM TO THE DRAWINGS AND PURCHASE ORDER REFERENCED ABOVE.

DATE **19 MARCH 2009**

G.F.I. Q.C. REP.

Jason Hall




Programme d'Assurance Qualité Enregistré / Registered Q.A. Program
ISO 9001:2000 AS9100

LETTRE DE CONFORMITÉ --LETTER OF COMPLIANCE

Date: 20 JANVIER 2009

Company Name: G.F.I. Division of Thomas & Betts limited
Address: 180 avenue Labrosse
City: Pointe Claire, Qué.
Zip Code: H9R 1A1

du client: 0075046
Customer's order #:


de commande SSMQ: 021908
SSMQ's Order #:

La présente est pour certifier que le matériel détaillé ci-dessous est conforme aux exigences de votre commande et des normes du grade tel que décrit:

The following is to certify that the material listed below meets your order requirements and grade standards as described:

Notre/Our Item #	# de pièces/ # of pieces	Épaisseur/Grandeur Guage/Size	Alliage/Trempe Alloy/Temper	Spécification / Specification	Lot/Heat
1	1	.050" X 48" X 144"	6061-0	AMS-QQ-A-250/11	564405

Bien à vous,
Yours truly,





Commis à l'administration.
Administration Clerk.

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Mark J. Vrabec

Mark J. Vrabec
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

924669 0
Ship Date B.L. No. Invoice No. Alcoa No. Item Page
2008-05-30 2963186 00000 5043842-2
P.O. No./Govt Contract No. Customer Mfg Order
N20720 SAMUEL SON & CO LT DCE-43842-2

Ship To: SAMUEL SON & CO LTD
S.S.M.Q
21525 CLARKE-GRAHAM
BAIE D'URFE H9X 3T5 QC

Item Description
0.05 IN TK (+0.0000 - .0035) X 48.0 IN W (+.125 -
.125) X 144.0 IN LN (+.15625 - .15625) (N) A/T 6061-
O FLAT SHEET FOR DISTRIBUTORS TOLERANCE GUARANTEED. AMS-QQ-A-
250/11 EXC_MRK AMS4025 REV K EXC_MRK
ASTMB209 REV 07 EXC_MRK CMMP025 REV Q EXC_MRK
CMMP019 REV D EXC_MRK CSTI008 REV D
((MARKED)) KRAFT PAPER INTERLEAVED
MAX GROSS SKID WGT: 6000 LB QUAN TOL +0 -
-30 % CQR 0216075 REV 01 CUST REQ 08-03-
01 *** W/E 08-04-05 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	623928	564405	4317	132	PC	

Notes for CQR: 0216075.1

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ- A-250/11 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/11P. PROD UCT
PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/11 F ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/11.
Exception to Spec CMMP025 ; Revsn: Q Issue: Letter dated 2004-08-24 from STEGEMANN, JEAN to BLACKIE, B.
Exception to Spec CMMP019 ; Revsn: D Issue: Letter dated 2006-09-28 from AHERN, DENNIS T to BLACKIE, BILL.
Exception to Spec CSTI008 ; Revsn: D Issue: Letter dated 2006-12-04 from AHERN, DENNIS T to BLACKIE, BILL.

CQR: 0216075.1 -Specification Limits

Temp	Dir	Max	Min	UTS KSI	TYS KSI	EL4D PCT
0	Long Transv.	22.0	12.0	16		
T42	Long Transv.	30.0	14.0	16		
T62	Long Transv.	42.0	35.0	10		



CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Mark J. Vrabec

Mark J. Vrabec
Director of Manufacturing Davenport Works

Kenton P. Young

Kenton P. Young
Quality Assurance Manager

924669
Ship Date 2008-05-30 B.L. No. 2963186 Invoice No. 00000 Alcoa No. Item 5043842-2
P.O. No./Govt Contract No. N20720 Customer SAMUEL SON & CO LT DCE-43842-2 Mfg Order
Ship From: FIVEHOLE, IA Page 2

QCR: 0216075.1 -Specification Limits (cont.)

Chemical Composition		SI	FE	CU	MN	MG	CR	ZN	TI	Other Each	Other Total Aluminum
Alloy 6061	Max	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.15
Lot: 564405	Min	0.40		0.15		0.8	0.04				REMAIN

Lot: 564405 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No. Test	UTS KSI	TYS KSI	EL4D PCT
0	Long Transv.	2	17.8	8	25.8
			18	7.8	24.8
T42	Long Transv.	2	36.5	18	23.3
			36.6	18.1	21.9
T62	Long Transv.	2	50.8	43.8	13.3
			50.7	43.7	13

Cast Number	Chemical	SI	FE	CU	MN	MG	CR	ZN	TI
H3204064	Actuals	0.65	0.4	0.26	0.05	1.0	0.19	0.03	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

Jason Murdoch

From: Bill Beckett [bbeckett@dartaero.com]
Sent: March 31, 2009 6:30 AM
To: 'Jason Murdoch'
Subject: FW: Tail Light Fairing
Attachments: DSCN7274.JPG

Jason,
See attached authorization from Eng'g to ship the Tail Light Fairings from the batch produced by GFI with the non-conforming material.

Thanks,
Bill

From: David Shepherd [mailto:dshepherd@dartaero.com]
Sent: March 30, 2009 6:04 PM
To: 'Bill Beckett'
Cc: 'Mike Petsche'; 'L Lacelle'; 'Bgolden'; 'Harvey Siemens'
Subject: Tail Light Fairing

Bill,

We had the tail light fairing that you sent us installed on a tail boom at Eagle.
(Good news is that it seemed to fit quite well)
In a highly scientific test, we yanked on the tail light fairing about 20 lb in every direction.
Max required load in any direction was 5 lb.
We may have yielded the tailboom, but the tail light fairing is OK.

GO AHEAD AND SHIP THE TAIL LIGHT FAIRINGS.

Unless there are any objections, I will have Harvey complete a design review and update the drawing to add 6061-T0 as an option.

The design review will document the results of our highly scientific test.

Are there any other changes required to the drawing?
Speak now or forever hold your peace.

David

PS. I am willing to bet that there are as many revisions to the tail light fairing drawing as there is to the Tri-beam drawing

No virus found in this outgoing message.

Checked by AVG.

Version: 7.5.557 / Virus Database: 270.11.32/2030 - Release Date: 3/30/2009 8:40 AM

Chantal Lavoie

From: Pedro Mendez [Pedro.Mendez@tnb.com]
Sent: March 31, 2009 1:21 PM
To: Chantal Lavoie
Subject: Re: D3484-041

Hi Chantal

We didn't change any material we follow the process
the drawing specify 6061 T6 OR (optional 6061 T62 heat treat) we made at T0 for transfer to T62
after

According to form of the part the only way to fabricate are the optional material

Regards Pedro

Pedro Mendez

Représentant technique
Technical Sales Representative



180 Avenue Labrosse, Pointe-Claire
Quebec, Canada H9R 1A1

☎ (514) 630-4877

📠 (514) 630-4849

Email: pedro.mendez@tnb.com

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<http://groupwise.tnb.com/disclaimer/>

>>> "Chantal Lavoie" <clavoie@dartaero.com> 3/31/2009 11:40 AM >>>

Pedro. Could you please advise why you change the material for the tail light fairing. Please send me the
explanation by e-mail.

Thanks

Chantal